ii. harvesting the recombinant α1-6 fucosyltransferase from said cultured transformant cell.

Remarks

The Examiner has acknowledged Applicants' election to prosecute the claims of Group I, 27-29 and 35, for prosecution in the subject application. Claim 35 was objected to and has been amended so that it no longer depends on an unelected claim.

Rejection of claims 27-28 under 35 USC § 102 (a)

The Examiner has rejected claims 27-28 under 35 USC § 102 (a) as allegedly being anticipated by by Uozumi et al., Biochemistry, 1995, Vol. 67(7) # 4053 (hereinafter "Uozumi").

Applicants respectfully disagree with the Examiner's assertion because the Applicants assert that Uozumi does not enable the claimed invention.

> "In determining that quantum of prior art disclosure which is necessary to declare an applicant's invention `not novel' or `anticipated' within section 102, the stated test is whether a reference contains an `enabling disclosure'... ." *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). A reference contains an "enabling disclosure" if the public was in possession of the claimed invention before the date of invention. "Such possession is effected if one of ordinary skill in the art could have combined the publication's description of the invention with his [or her] own knowledge to make the claimed invention." *In re Donohue*, 766 F.2d 531, 226 USPQ 619 (Fed. Cir. 1985). See MPEP 2121.

Uozumi, mentions but does not teach the purification of α1-6 fucosyltransferase by extraction from a microsome fraction derived from porcine brain using a transferrin-derived asialogalactopeptide affinity column and a GDP-hexanolamine affinity column.

Applicant respectfully asserts that Uozumi does not represent a disclosure of a sufficient scope to render the claimed invention anticipated. For example, Uozumi does not teach what type pre-treatment of the microsome fraction is necessaty prior to application to the affinity column. Additionally, Uozumi does not sufficiently teach the

experimental conditions, e.g., buffer ingredients and concentrations, sufficient to make and use the claimed invention.

As such, one of ordinary skill in the art would not be in possession of the claimed invention because they would not know of these steps and therefore could not combine them with Uozumi's disclosure to make the claimed invention. Therefore, Applicants assert that Uozumi does not anticipate the claimed invention and respectfully request withdrawal of this rejection.

Rejection of claim 27 under 35 USC § 102 (b)

The Examiner has rejected claim 27 under 35 USC § 102 (b) as allegedly being anticipated by by Longmore et al., Carbohydrate Research, 1982, Vol. 100:365-392, (hereinafter "Longmore").

Applicants respectfully disagree with the Examiner's assertion. Applicant respectfully asserts that the claimed α1-6 fucosyltransferase is different from the α1-6 fucosyltransferase disclosed in Longmore in its requirement for divalent metal for activity. Moreover, even if Longmore did reference the claimed α1-6 fucosyltransferase, it would not enable one of skill in the art to make and use the claimed α1-6 fucosyltransferase.

Longmore teaches that its α1-6 fucosyltransferase requires the presence of divalent metal ions for activity because (1) the enzyme reaction catalyzed by Longmore's enzyme was carried out in the presence of $MgCl_2$ (page 376, line 23); (2) reaction was stopped by the addition of the chelating agent EDTA which removes Mg^{++} cations. In contrast, the claimed α1-6 fucosyltransferase is capable of activity in the absence of divalent cation and is not inhibited in the presence of 5 mM EDTA (page 26, line 32 to page 27, line 2).

Furthermore, claim 27 recites an *isolated* porcine α1-6 fucosyltransferase. Longmore does not teach an isolated α1-6 fucosyltransferase nor does it teach how to go about isolating an α1-6 fucosyltransferase. In fact, Longmore concedes on page 390, line 38, that, "[v]arious problems remain unsloved," including the fact that, "the enzyme has not been purified; our preliminary attempts at purification have not been successful." (page 391, lines 2-3). As such, one of ordinary skill in the art would not be in possession of the claimed invention based on the disclosure of Longmore.

In view of the remarks above, Applicants respectfully request withdrawal of this rejection.

Rejection of claim 28 under 35 USC § 103 (a)

The Examiner has rejected claim 28 under 35 USC § 103 (a) as allegedly being unpatentably obvious over Longmore in view of the knowledge supposedly common to one of ordinary skill in the art.

According to the Examiner, using the alleged isolation method of Longmore, it would have been obvious to isolate and purify the enzyme from different organs including the brain.

Applicants respectfully disagree with the Examiner's assertion. Applicants respectfully assert that the claimed porcine α1-6 fucosyltransferase is different from the α1-6 fucosyltransferase disclosed in Longmore in its requirement for divalent metal for activity. Moreover as stated above, Longmore does not teach or enable isolation of the claimed α1-6 fucosyltransferase. As such, the short comings of Longmore cannot be covercome by one of skill in the art even if they would be motivated to isolate and purify the claimed protein from porcine brain.

In view of the remarks above, Applicants assert that Longmore is an inappropriate reference and respectfully request withdrawal of this rejection.

Rejection of claims 29 and 35 under 35 USC § 103 (a)

The Examiner has rejected claims 29 and 35 under 35 USC § 103 (a) as allegedly being unpatentably obvious over Longmore or Uozumi in view of the knowledge supposedly common to one of ordinary skill in the art.

Given the alleged teachings of Longmore or Uozumi, the Examiner suggests that one of skill in the art would have been motivated to make the recombinant form of the claimed protein using the common knowledge of cloning available in the art of molecular biology. Applicants respectfully disagree with the Examiner's assertion.

Applicants assert that the claimed porcine α1-6 fucosyltransferase is different from the α1-6 fucosyltransferase disclosed in Longmore in its requirement for divalent metal for activity. Moreover as stated above, Longmore does not teach or enable isolation of the claimed α1-6 fucosyltransferase.

Additionally, as stated above, Applicants assert that Uozumi does not represent a disclosure of a sufficient scope to enable the claimed isolated porcine α1-6 fucosyltransferase. As such, Uozumi does not disclose information sufficient to make a recombinant version thereof.

Therefore, the shortcomings of Longmore and Uozumi cannot be overcome by one of skill in the art even if they would be motivated to make a recombinant version of the claimed porcine α1-6 fucosyltransferase as recited in claims 29 and 35. In view of the remarks above, Applicants respectfully request withdrawal of this rejection.

Conclusion

Applicants hereby request a one month extension of time and under 37 C.F.R. § 1.136(a) and hereby authorize such fees to be charged to our Deposit Account No. 11-0600. It is not believed that fees for net addition of claims are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 11-0600.

Respectfully submitted,

KENYON & KENYON

Date: May 2, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Please amend the claims as indicated below:

35. A recombinant α1-6 fucosyltransferase produced [according to the method of claim 34] by the method comprising:

i. culturing a transformant cell obtained by transforming a host cell with an expression vector comprising a polynucleotide having the sequence of SEQ ID NO: 1 or a polynulceotide encoding the the amino acid sequence of SEQ ID NO: 2; and

ii. harvesting the recombinant α1-6 fucosyltransferase from said cultured transformant cell.